DC Pass

Power Splitter/Combiner ZN8PD1-63W-S+

8 Way-0° 50Ω 500 to 6000 MHz

The Big Deal

- Wideband, 500 to 6000 MHz
- Low insertion loss, 1.5 dB
- Good isolation, 24 dB
- High power handling, up to 10W as splitter

CASE STYLE: JN1359

Product Overview

Mini-Circuits' ZN8PD1-63W-S+ is an 8-way 0˚ splitter/combiner providing 10W power handling as a splitter and low insertion loss across the 500 to 6000 MHz range, covering many wireless communications bands as well as SatCom IF and more. Its combination of high power and low loss minimize power dissipation due to intrinsic losses and provide excellent signal fidelity from input to output. This model also provides high port-to-port isolation and low amplitude and phase unbalance. It comes housed in a rugged aluminum alloy case (8.25 x 5.00 x 0.63") with SMA connectors.

Key Features

Feature	Advantages
Wideband, 500 to 6000 MHz	ZN8PD1-63W-S+ covers many popular wireless communications bands, making it suitable for a wide variety of applications.
High power handling: • 10W as a splitter • 1.5W as a combiner	Suitable for a variety of system power requirements.
Low insertion loss, 1.5 dB	Very low insertion loss minimizes intrinsic losses, making this model a suitable candidate for signal distribution applications where low loss is a requirement.
Excellent input/output VSWR • Input VSWR, 1.3:1 • Output VSWR, 1.2:1	Provides excellent thru-path transmission with low signal reflection.
Low unbalance: • 0.2 dB amplitude unbalance • 4.5˚ phase unbalance	ZN8PD-362HP+ produces nearly equal output signals, ideal for parallel path / multi-channel systems.
DC Passing, 1.6A (200mA each port)	Supports applications where DC power is needed at later stages in the system.

Notes
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DC Pass

Power Splitter/Combiner

ZN8PD1-63W-S+

8 Way-0° 50Ω 500 to 6000 MHz

Generic photo used for illustration purposes only

CASE STYLE: JN1359

Connectors	Model
SMA	ZN8PD1-63W-S+

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

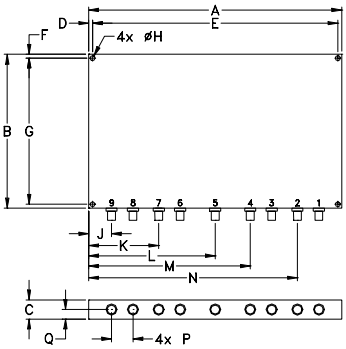
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	10W max.
Internal Dissipation	1.5W max.
DC Current	1.6A(200mA for each port)

Permanent damage may occur if any of these limits are exceeded.

Coaxial Connections

SUM PORT	5
PORT 1	1
PORT 2	2
PORT 3	3
PORT 4	4
PORT 5	6
PORT 6	7
PORT 7	8
PORT 8	9

Outline Drawing

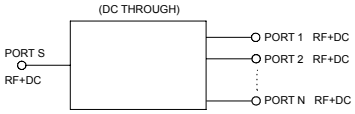


Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H
8.25	5.00	.63	.13	8.000	.13	4.750	.156
209.55	127.00	16.00	3.30	203.20	3.30	120.65	3.96

J	K	L	M	N	P	Q	wt
.74	2.28	4.13	5.27	6.81	.70	.31	grams
18.80	57.91	104.90	133.86	172.97	17.78	7.87	720

Electrical Schematic



Features

- wideband, 500 to 6000 MHz
- high isolation, 24 dB typ.
- good input matching VSWR, 1.3:1 typ.
- good output matching VSWR, 1.2:1 typ.
- up to 10W power input as splitter

Applications

- UHF TV
- cellular/ISM/GSM
- satellite distribution
- GPS/L-BAND (MARSAT)
- PCS/DCS/UMTS
- ISM
- MMDS
- SATCOM
- WiMax

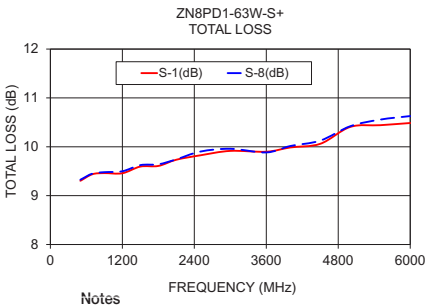
Electrical Specifications at 25°C

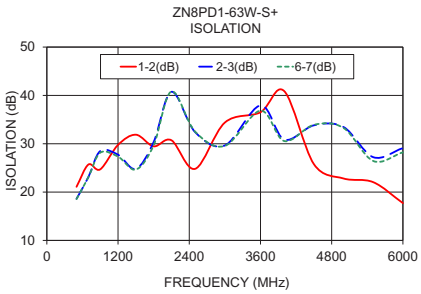
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		500		6000	MHz
Insertion Loss (above theoretical 9.0 dB)	700-3600	—	0.9	1.4	dB
	3600-5500	—	1.5	2.1	
	500-6000	—	1.7	2.3	
Isolation	700-3600	19	25	—	dB
	3600-5500	18	24	—	
	500-6000	15	21	—	
Phase Unbalance	700-3600	—	3	8	Degree
	3600-5500	—	4.5	10	
	500-6000	—	5.0	12	
Amplitude Unbalance	700-3600	—	0.2	0.5	dB
	3600-5500	—	0.2	0.7	
	500-6000	—	0.4	0.9	
VSWR (Port S)	700-3600	—	1.3	1.6	:1
	500-6000	—	1.4	1.8	
VSWR (Port 1-8)	700-3600	—	1.15	1.4	:1
	3600-5500	—	1.10	1.35	
	500-6000	—	1.2	1.4	

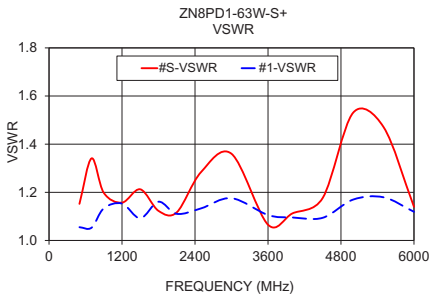
Typical Performance Data

Freq. (MHz)	Total Loss[1] (dB)						Amplitude Unbalance (dB)	Isolation (dB)				Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 8
	S-1	S-2	S-3	S-4	S-6	S-8		1-2	2-3	3-4	6-7				
500	9.30	9.30	9.29	9.31	9.34	9.33	0.06	21.09	18.61	20.89	18.55	0.73	1.15	1.06	1.07
700	9.44	9.44	9.45	9.47	9.46	9.45	0.03	25.69	23.10	25.94	23.09	0.95	1.34	1.05	1.05
900	9.46	9.46	9.49	9.50	9.51	9.48	0.07	24.71	28.49	24.45	28.15	0.83	1.20	1.13	1.13
1200	9.46	9.48	9.50	9.51	9.53	9.50	0.09	29.77	27.73	27.61	27.33	1.53	1.16	1.15	1.15
1500	9.60	9.61	9.57	9.56	9.57	9.62	0.07	31.87	24.80	35.73	24.65	1.70	1.21	1.09	1.10
1800	9.61	9.63	9.67	9.67	9.70	9.64	0.12	29.47	30.36	26.44	29.69	2.06	1.12	1.16	1.15
2100	9.74	9.78	9.82	9.83	9.82	9.74	0.12	30.72	40.74	26.59	40.82	2.34	1.12	1.11	1.12
2500	9.83	9.88	9.96	9.92	10.03	9.90	0.20	24.81	32.39	21.96	32.48	2.79	1.28	1.13	1.15
3000	9.92	9.99	10.04	9.99	10.03	9.96	0.13	34.39	29.64	27.95	29.56	3.07	1.36	1.18	1.18
3600	9.90	9.94	9.95	9.92	9.94	9.88	0.07	36.52	37.92	42.47	36.85	4.03	1.07	1.11	1.11
4000	9.99	10.08	10.14	10.07	10.11	10.02	0.15	40.89	30.87	46.17	30.56	4.33	1.11	1.10	1.08
4500	10.06	10.19	10.33	10.25	10.30	10.13	0.27	25.78	33.81	26.53	33.92	5.12	1.18	1.09	1.09
5000	10.41	10.46	10.57	10.56	10.54	10.42	0.21	22.81	33.46	20.87	33.26	4.81	1.53	1.17	1.17
5500	10.44	10.53	10.65	10.57	10.64	10.56	0.30	22.05	27.22	21.62	26.43	5.78	1.47	1.18	1.19
6000	10.49	10.58	10.78	10.62	10.79	10.63	0.31	17.72	29.09	18.07	28.22	5.72	1.14	1.12	1.14

1. Total Loss = Insertion Loss + 9dB splitter loss.







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8 Way-0° Power Splitter/Combiner ZN8PD1-63W-S+

Typical Performance Data

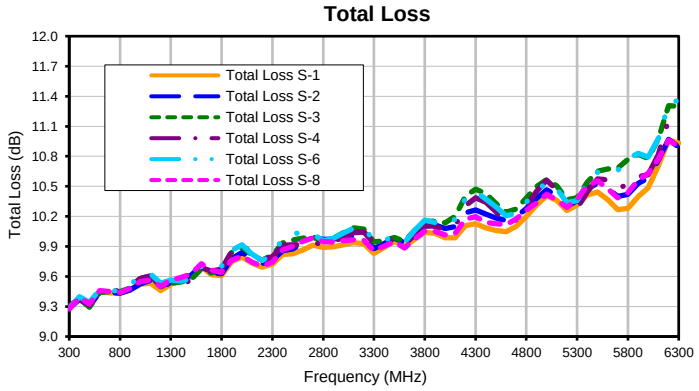
FREQ. (MHz)	TOTAL LOSS[1] (dB)						AMP. UNBAL. (dB)	ISOLATION (dB)				PHASE UNBAL. (deg.)
	S-1	S-2	S-3	S-4	S-6	S-8		1-2	2-3	3-4	6-7	
300	9.28	9.28	9.29	9.31	9.28	9.27	0.04	10.25	13.53	10.22	13.48	0.35
400	9.38	9.37	9.38	9.38	9.40	9.39	0.03	14.04	15.65	14.00	15.60	0.41
500	9.30	9.30	9.29	9.31	9.34	9.33	0.06	21.09	18.61	20.89	18.55	0.73
600	9.45	9.44	9.44	9.47	9.47	9.46	0.04	32.45	21.26	32.22	21.24	0.92
700	9.44	9.44	9.45	9.47	9.46	9.45	0.03	25.69	23.10	25.94	23.09	0.95
800	9.43	9.43	9.45	9.46	9.46	9.44	0.04	29.33	25.32	29.51	25.21	0.86
900	9.46	9.46	9.49	9.50	9.51	9.48	0.07	24.71	28.49	24.45	28.15	0.83
1000	9.52	9.53	9.58	9.58	9.61	9.55	0.09	23.73	30.20	23.19	29.62	1.02
1100	9.53	9.56	9.61	9.61	9.63	9.56	0.12	26.52	28.76	25.43	28.29	1.40
1200	9.46	9.48	9.50	9.51	9.53	9.50	0.09	29.77	27.73	27.61	27.33	1.53
1300	9.52	9.54	9.53	9.53	9.57	9.56	0.06	43.90	26.72	35.45	26.40	1.71
1400	9.55	9.57	9.55	9.53	9.56	9.59	0.06	34.09	25.54	41.72	25.35	1.78
1500	9.60	9.61	9.57	9.56	9.57	9.62	0.07	31.87	24.80	35.73	24.65	1.70
1600	9.70	9.71	9.68	9.69	9.70	9.73	0.05	28.86	25.23	28.91	24.97	1.66
1700	9.62	9.63	9.63	9.65	9.68	9.66	0.09	27.76	27.09	26.57	26.65	1.83
1800	9.61	9.63	9.67	9.67	9.70	9.64	0.12	29.47	30.36	26.44	29.69	2.06
1900	9.75	9.78	9.84	9.85	9.86	9.76	0.14	26.96	34.29	24.23	33.48	2.12
2000	9.79	9.84	9.89	9.92	9.91	9.81	0.15	26.17	37.47	23.52	37.10	2.26
2100	9.74	9.78	9.82	9.83	9.82	9.74	0.12	30.72	40.74	26.59	40.82	2.34
2200	9.69	9.73	9.76	9.76	9.76	9.70	0.09	47.23	43.72	32.08	42.97	2.35
2300	9.72	9.76	9.81	9.80	9.82	9.74	0.12	31.29	37.94	27.78	37.31	2.29
2400	9.82	9.86	9.93	9.91	9.98	9.86	0.17	26.02	34.29	23.44	34.06	2.41
2500	9.83	9.88	9.96	9.92	10.03	9.90	0.20	24.81	32.39	21.96	32.48	2.79
2600	9.87	9.93	9.98	9.92	10.04	9.95	0.17	24.77	30.64	21.74	30.85	3.23
2700	9.91	9.99	9.99	9.94	10.02	9.99	0.11	24.83	29.05	22.09	29.19	3.37
2800	9.89	9.97	9.95	9.92	9.96	9.95	0.08	27.52	28.19	24.09	28.19	3.20
2900	9.90	9.97	9.98	9.95	9.98	9.95	0.09	34.13	28.45	27.61	28.29	3.04
3000	9.92	9.99	10.04	9.99	10.03	9.96	0.13	34.39	29.64	27.95	29.56	3.07
3100	9.94	10.00	10.09	10.04	10.08	9.97	0.15	29.09	31.06	25.24	31.36	3.22
3200	9.93	9.99	10.07	10.04	10.08	9.96	0.16	26.89	32.02	23.69	32.70	3.58
3300	9.83	9.88	9.95	9.93	9.96	9.86	0.13	27.91	33.30	24.69	33.93	4.01
3400	9.89	9.93	9.96	9.95	9.96	9.90	0.08	28.16	37.44	26.93	37.88	4.23
3500	9.95	9.98	9.99	9.98	9.99	9.95	0.04	28.74	47.17	29.67	47.38	4.25
3600	9.90	9.94	9.95	9.92	9.94	9.88	0.07	36.52	37.92	42.47	36.85	4.03
3700	9.97	10.02	10.06	10.01	10.06	9.97	0.09	33.71	33.43	31.20	32.19	3.91
3800	10.04	10.10	10.15	10.11	10.16	10.05	0.12	29.83	31.76	27.81	30.59	4.20
3900	10.03	10.11	10.15	10.10	10.14	10.05	0.12	33.78	31.12	31.01	30.22	4.43
4000	9.99	10.08	10.14	10.07	10.11	10.02	0.15	40.89	30.87	46.17	30.56	4.33
4100	9.99	10.10	10.20	10.11	10.17	10.03	0.22	29.86	30.88	31.02	31.14	4.15
4200	10.11	10.24	10.40	10.31	10.38	10.17	0.29	26.63	31.92	26.51	32.37	4.10
4300	10.13	10.26	10.47	10.39	10.45	10.20	0.35	26.00	33.54	25.32	34.18	4.51
4400	10.08	10.22	10.43	10.34	10.37	10.14	0.34	25.27	34.38	25.18	35.16	4.88
4500	10.06	10.19	10.33	10.25	10.30	10.13	0.27	25.78	33.81	26.53	33.92	5.12
4600	10.05	10.16	10.24	10.14	10.21	10.12	0.20	30.98	32.49	32.91	32.19	5.02
4700	10.10	10.20	10.27	10.17	10.23	10.17	0.17	40.22	31.73	31.15	31.29	4.48
4800	10.20	10.28	10.38	10.29	10.34	10.26	0.18	26.77	32.00	23.70	31.64	4.25
4900	10.31	10.38	10.50	10.45	10.45	10.33	0.20	23.40	32.73	21.13	32.51	4.36
5000	10.41	10.46	10.57	10.56	10.54	10.42	0.21	22.81	33.46	20.87	33.26	4.81
5100	10.36	10.41	10.50	10.46	10.48	10.36	0.19	22.91	32.48	22.04	32.75	5.50
5200	10.26	10.30	10.37	10.28	10.34	10.29	0.15	24.33	30.51	24.58	30.84	6.06
5300	10.31	10.36	10.39	10.28	10.36	10.37	0.13	28.34	29.02	31.60	28.71	5.94
5400	10.42	10.48	10.54	10.45	10.53	10.51	0.19	27.94	27.97	29.14	27.22	5.70
5500	10.44	10.53	10.65	10.57	10.64	10.56	0.30	22.05	27.22	21.62	26.43	5.78
5600	10.37	10.48	10.67	10.56	10.64	10.48	0.38	20.43	26.63	19.71	26.10	5.76
5700	10.27	10.40	10.68	10.48	10.66	10.39	0.50	22.71	25.96	21.12	26.02	5.55
5800	10.28	10.42	10.77	10.52	10.78	10.44	0.53	25.48	26.13	23.04	26.41	5.91
5900	10.40	10.53	10.82	10.60	10.83	10.56	0.44	20.02	27.57	20.34	27.33	6.32
6000	10.49	10.58	10.78	10.62	10.79	10.63	0.31	17.72	29.09	18.07	28.22	5.72
6100	10.71	10.76	10.97	10.82	10.98	10.77	0.32	18.18	29.85	18.94	29.23	4.78
6200	10.96	10.97	11.31	11.17	11.32	10.96	0.45	17.31	26.65	18.58	26.94	4.54
6300	10.93	10.89	11.30	11.19	11.36	10.90	0.57	13.21	22.45	13.73	22.68	5.12

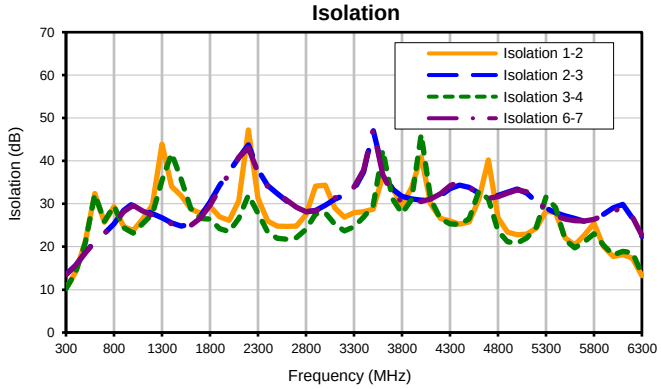
FREQ. (MHz)	VSWR (:1)		
	S	1	8
300	1.25	1.23	1.23
400	1.40	1.11	1.11
500	1.15	1.06	1.07
600	1.39	1.11	1.12
700	1.34	1.05	1.05
800	1.24	1.10	1.09
900	1.20	1.13	1.13
1000	1.05	1.13	1.13
1100	1.22	1.16	1.16
1200	1.16	1.15	1.15
1300	1.20	1.15	1.16
1400	1.18	1.13	1.15
1500	1.21	1.09	1.10
1600	1.43	1.11	1.11
1700	1.29	1.12	1.12
1800	1.12	1.16	1.15
1900	1.24	1.19	1.18
2000	1.11	1.15	1.15
2100	1.12	1.11	1.12
2200	1.12	1.13	1.13
2300	1.20	1.15	1.15
2400	1.36	1.16	1.17
2500	1.28	1.13	1.15
2600	1.29	1.11	1.12
2700	1.40	1.07	1.08
2800	1.36	1.05	1.05
2900	1.37	1.12	1.12
3000	1.36	1.18	1.18
3100	1.40	1.22	1.23
3200	1.43	1.22	1.24
3300	1.17	1.19	1.21
3400	1.18	1.17	1.18
3500	1.29	1.14	1.15
3600	1.07	1.11	1.11
3700	1.29	1.15	1.14
3800	1.40	1.16	1.15
3900	1.27	1.12	1.10
4000	1.11	1.10	1.08
4100	1.17	1.13	1.12
4200	1.40	1.16	1.16
4300	1.39	1.15	1.16
4400	1.27	1.14	1.13
4500	1.18	1.09	1.09
4600	1.07	1.02	1.03
4700	1.16	1.10	1.12
4800	1.35	1.18	1.18
4900	1.52	1.19	1.19
5000	1.53	1.17	1.17
5100	1.43	1.14	1.16
5200	1.26	1.09	1.12
5300	1.26	1.08	1.09
5400	1.47	1.15	1.16
5500	1.47	1.18	1.19
5600	1.29	1.12	1.14
5700	1.16	1.07	1.10
5800	1.07	1.16	1.18
5900	1.12	1.19	1.22
6000	1.14	1.12	1.14
6100	1.48	1.11	1.09
6200	1.87	1.25	1.24
6300	1.87	1.25	1.26

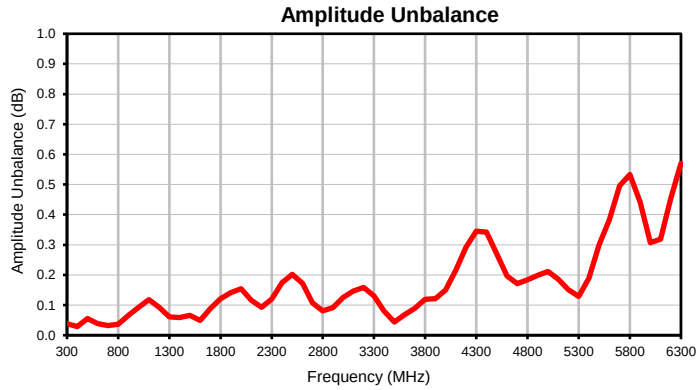
[1]Total Loss = Insertion Loss + 9dB Splitter Loss

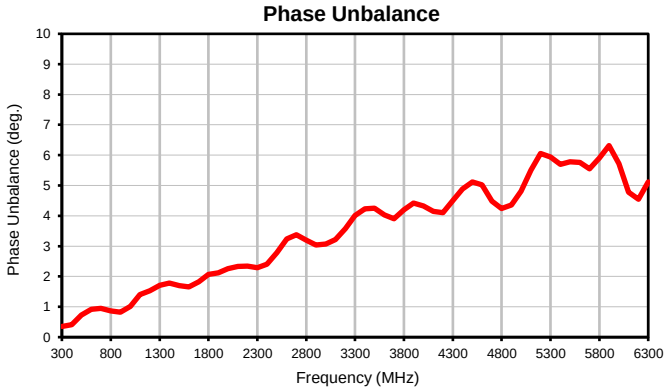
8 Way-0° Power Splitter/Combiner ZN8PD1-63W-S+

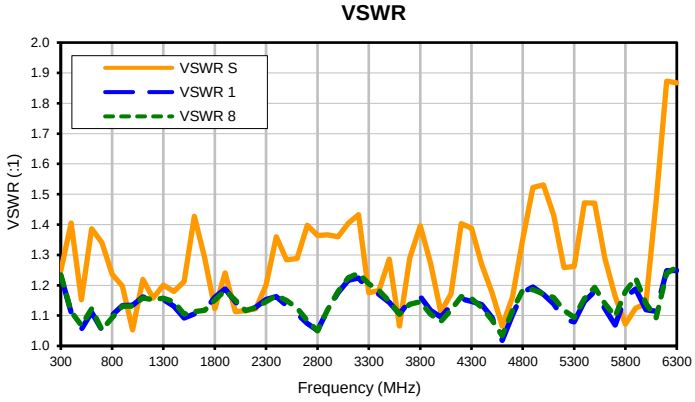
Typical Performance Curves







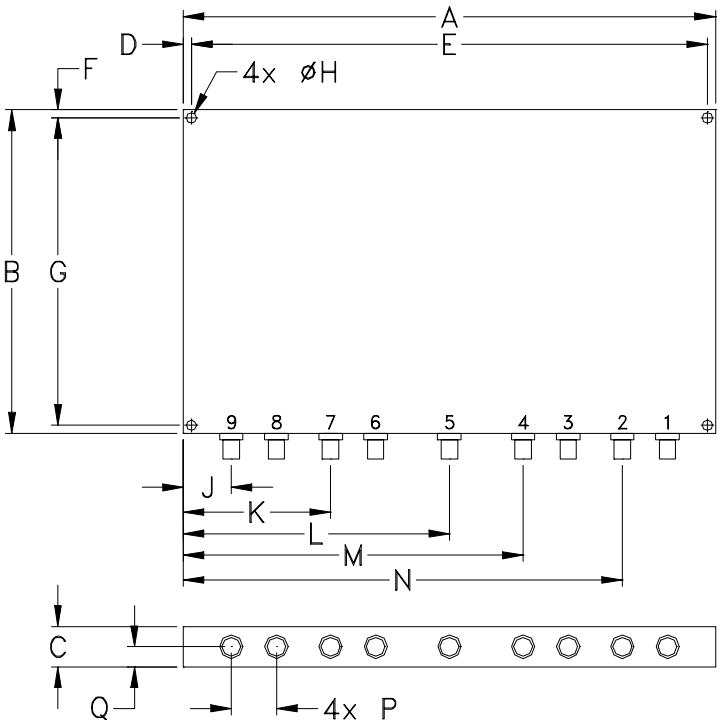




Case Style JN

JN1359

Outline Dimensions



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	N
JN1359	8.25 (209.55)	5.00 (127.00)	.63 (16.00)	.13 (3.30)	8.000 (203.20)	.13 (3.30)	4.750 (120.65)	.156 (3.96)	.74 (18.80)	2.28 (57.91)	4.13 (104.90)	5.27 (133.86)	6.81 (172.97)

CASE #.	P	Q	WT, GRAM
JN1359	.70 (17.78)	.31 (7.87)	720

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

Notes:

1. Case material: Aluminum alloy.
2. Case finish:
   For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.

Mini-Circuits®
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Environmental Specifications ENV28

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I

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